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PTO/SB/33 (07-05)

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<b>PRE-APPEAL BRIEF REQUEST FOR REVIEW</b>		<b>Docket Number (Optional)</b>  <b>SCS-550-609</b>
Application Number  <div style="text-align: center;">10/520,160</div>	Filed  <div style="text-align: center;">January 25, 2005</div>	
First Named Inventor  <div style="text-align: center;">Lillington</div>		
Art Unit  <div style="text-align: center;">2611</div>	Examiner  <div style="text-align: center;">H. Singh</div>	

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).  
Note: No more than five (5) pages may be provided.


I am the

☐ Applicant/Inventor

☐ Assignee of record of the entire interest. See 37 C.F.R. § 3.71. Statement under 37 C.F.R. § 3.73(b) is enclosed. (Form PTO/SB/96)

☒ Attorney or agent of record 27,393  
(Reg. No.)

☐ Attorney or agent acting under 37CFR 1.34.  
Registration number if acting under 37 C.F.R. § 1.34 \_\_\_\_\_

  
 Signature  
 Stanley C. Spooner  


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 Typed or printed name  


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 703-816-4028  
 Requester's telephone number  


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 August 5, 2008  
 Date  


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NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.\*

☒ \*Total of 1 form/s are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**STATEMENT OF ARGUMENTS IN SUPPORT OF  
PRE-APPEAL BRIEF REQUEST FOR REVIEW**

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The following listing of clear errors in the Examiner's rejection and his failure to identify essential elements necessary for a *prima facie* basis of rejection is responsive to the Final Rejection mailed March 5, 2008 (Paper No. 20080225).

The Court of Appeals for the Federal Circuit has held that "the PTO has the burden under Section 103 to establish a *prima facie* case of obviousness." *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). "It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references."

**Error # 1 The Examiner fails to indicate where either Lillington or Cowley teach the "at least one complex frequency shifting converter" of independent claim 1**

The Examiner on page 3 admits Lillington "doesn't specifically teaching [sic] . . . at least one of said plurality of frequency separating stages is configured as a tuneable complex frequency shifting converter." Lillington clearly doesn't show the claimed "tuneable feature." The Examiner contends that the missing feature is shown in Cowley but this contention is in error. Firstly, Cowley is an analog system for providing an "intermediate frequency" or IF signal and involves a "local oscillator 3 [which] is tuneable so as to select a desired input channel by converting it to the first intermediate frequency."

Secondly, the Examiner fails to identify any teaching in Cowley of a "complex frequency shifting converter" as claimed in Claim 1 or as discussed in the present specification. The Examiner appears to be seizing upon the word "tuneable" and ignoring the claim terms "complex" and "frequency shifting" both of which modify the term "converter."

The Examiner's citations to Cowley at column 2, lines 26-32 do not teach "complex" and "frequency shifting" of a converter – these lines merely discuss having a variable frequency local

oscillator “which may have an output frequency which is shiftable by at least one discrete step.”

No disclosure of any “complex frequency shifting converter” here. The other citation is to column 3, lines 8-22 which discloses a “local oscillator 3 [which] is tuneable so as to select a desired input channel by converting it to the first intermediate frequency.” No disclosure of any “complex frequency shifting converter” here either.

Where or how the Examiner believes Cowley teaches anything other than mere “tuneability” is not seen – certainly, there is no teaching of Appellants claim 1 frequency separating stages, in which at least one stage is configured to act as a “tuneable complex frequency shifting converter.” Without disclosure of the claimed “converter” in at least one of the combination references, all rejections under 35 USC §103 fail with respect to claim 1 (and all claims dependent thereon).

**Error # 2 The Examiner fails to indicate where either Lillington or Cowley teach the claimed interrelationship of the frequency shifting converter of independent claim 1 “for outputting a frequency shifted complex output signal representing a portion of said input bandwidth centred other than at  $-F_s/4$  or  $+F_s/4$ .”**

Since Lillington, as admitted by the Examiner (see above), doesn’t teach the claimed “converter,” it cannot possibly teach the claimed interrelationship of the converter, i.e., “input bandwidth centred other than at  $-F_s/4$  or  $+F_s/4$ .” More significantly, Lillington’s “filter bank A output” cited by the Examiner on page 3 is not related to the claimed “input bandwidth.” In fact, Lillington teaches the direct opposite of the current claims when he teaches in ¶[0033] that the upper and lower halves of the input bands are centered at 0 to  $+F_s/2$  (i.e.,  $+F_s/4$ ) and 0 to  $-F_s/2$  (i.e.,  $-F_s/4$ ). Regarding Cowley, the Examiner makes no allegation that the claimed interrelationship (“input bandwidth centred other than at  $-F_s/4$  or  $+F_s/4$ ”) is either shown or inherent in the Cowley output.

Again, without a teaching of the claimed output signal (“centred other than at  $-F_s/4$  or  $+F_s/4$ ”) from the “converter” in either Lillington or Cowley, the combination of these references

cannot teach Appellant's claim 1 invention or that of claims 2-10 dependent thereon. Thus there is no basis for a *prima facie* case of obviousness under 35 USC §103.

**Error # 3 The Examiner fails to appreciate that Lillington's two outputs and Cowley's single output would not be combinable**

Claim 1 requires that each of the frequency separating stages provide two "complex output signal[s]" and the Examiner generally suggests that Lillington teaches the two output signals. However, Cowley's frequency changer is a mixer 2 and a local oscillator 3 which convert any selected channel to a single intermediate frequency signal output (col. 3, line 64-col. 4, line 1). There is no disclosure in Cowley of any production of two output signals (complex or not). Additionally, there is no disclosure of producing an output signal that represents either the "upper portion of said input bandwidth" or a "lower portion of said input bandwidth." Should the Examiner believe otherwise, he is requested to specifically identify where Cowley contains any such teaching.

Why would persons of ordinary skill seek to take structures from one and combine them with the other when the references are directed to different problems and use different numbers of signals to solve those problems? The burden is on the Examiner to establish how or why one would pick and chose elements from radically different disclosures and then combine them in the manner of the Appellant's claim. He has failed to meet this burden, and, as a result, the combination of Lillington and Cowley does not support a *prima facie* case of obviousness under 35 USC §103 for claim 1 or any claims dependent thereon.

**Error # 4 The Examiner fails to appreciate that Lillington's digital disclosure could not be combined with Cowley's analog disclosure**

The Examiner apparently also fails to realize that the Lillington reference is digital in nature while the Cowley reference is analog in nature. Those of ordinary skill in the art will clearly understand that one cannot merely pick and chose digital and analog elements and then combine them into an operable embodiment. While some hybrid systems might exist, extensive

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care must be taken to convert analog signals to digital and then back again or *vice versa*. There is no disclosure contained in either Lillington or Cowley that suggests that one would want to even try to combine portions of the references.

Accordingly, those of ordinary skill, would not seek to combine portions of Lillington with Cowley because they would recognize that they are inherently not combinable. Without explanation as to how and why one would take elements purportedly taught in the digital Lillington world and purportedly taught in the analog Cowley world and combine them in the manner of Appellants claim 1, there is no *prima facie* case of obviousness.

In its recent decision, the U.S. Supreme Court in *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (April 2007), held that it is often necessary for a court to look to interrelated teachings of multiple patents, the effects of demands known to the design community or present in the marketplace and the background knowledge possessed by a person of ordinary skill in the art in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. The Supreme Court held that “[t]o facilitate review, this analysis should be made explicit.” *Id.* at 1396. The Examiner has failed to provide any analysis as to the combination of the Lillington and Cowley references and therefore has failed to meet his burden of setting out a *prima facie* case of obviousness under 35 USC §103.

**Error # 5 The Examiner fails to appreciate that both Lillington and Cowley teach away from the claimed combination**

The Examiner also appears to ignore that both the Lillington and Cowley references teach away from the claimed invention. Lillington suggests two digital signal outputs and Cowley suggests a single analog output which would teach away from any “tuneable complex frequency shifting converter” with dual outputs. Additionally, both references teach outputs which do not have any signal “representing a portion of said input bandwidth centred other than at  $-F_s/4$  or  $+F_s/4$ ” (Lillington, as noted above, teaches the direct opposite).

The Court of Appeals for the Federal Circuit has held that it is "error to find obviousness where references 'diverge from and teach away from the invention at hand'." *In re Fine*, 508 F.2d 1310, 1315 (CA-5, 1975), cert. denied, 429 U.S. 1072, 48 AFTR2d 1596, 1598 (Fed. Cir. 1988). Because Lillington and Cowley are incompatible with each other and because they both teach away from the claimed first and second frequency shifted complex output signals, even if the Examiner had made out a *prima facie* case of obviousness (and this contention is respectfully traversed), any such case is clearly rebutted.

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#### SUMMARY

The Examiner fails to identify where in the prior art references at least two claimed structures and interrelationships between structures are disclosed, i.e., (1) at least one "complex frequency shifting converter;" and (2) an "output signal representing a portion of said input bandwidth centred other than at  $-F_s/4$  or  $+F_s/4$ ." In addition, the Examiner fails to appreciate the inherent incompatibility between Lillington's two digital output signals and Cowley's single analog output signal. Not only are they incompatible, but both teach away from the claim 1 combination in several aspects. As a result, there can be no *prima facie* case of obviousness of claim 1 (and thus claims 2-10 dependent thereon) set out by the Examiner and/or any *prima facie* case has been clearly rebutted by the contrary teaching of the prior art.

As a result of the above, there is simply no support for the rejection of Applicants' independent claim 1 or claims dependent thereon under 35 USC §103. Applicants respectfully request that the Pre-Appeal Panel find that the application is allowed on the existing claims and prosecution on the merits should be closed.